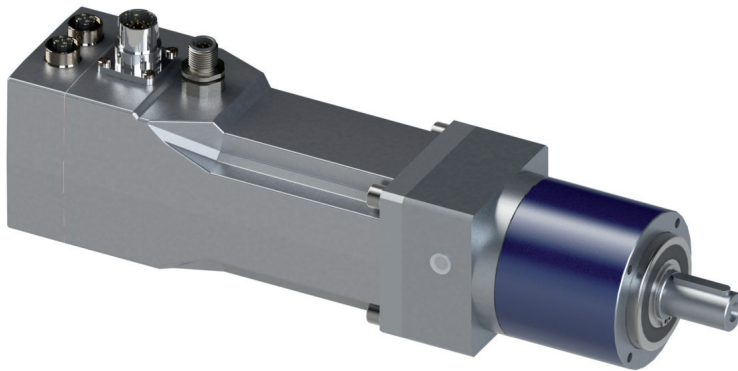


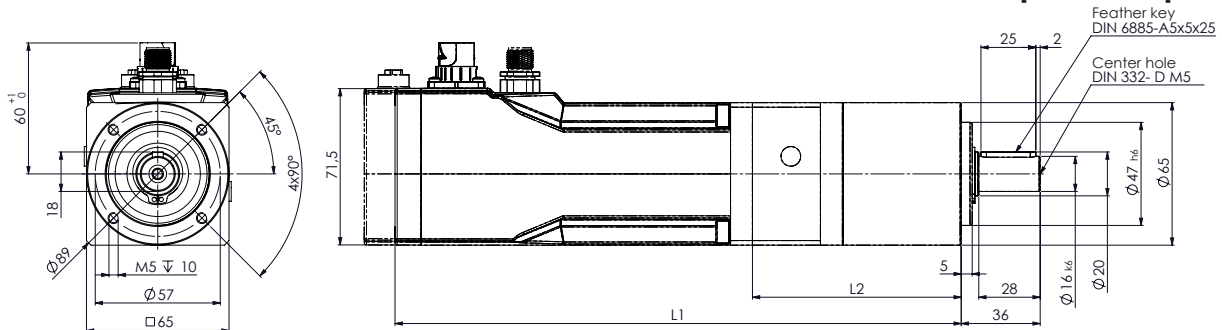
## HFI 32 - GPK 65



### Integrated Synchronous Servo Drive with planetary gear

positioning capability  
various field bus systems  
functional safety STO  
with or without parking brake

### Planetary gear series GPK 65 up to 75 Nm peak torque



| Type          | Gear Ratio            | Dimension |        |
|---------------|-----------------------|-----------|--------|
|               |                       | L1 *) **) | L2 **) |
| HFI3260-GPK65 | 4 :1 - 9:1(1-stage)   | 260       | 97     |
| HFI3260-GPK65 | 16 :1 - 49:1(1-stage) | 278       | 115    |
| HFI3290-GPK65 | 4 :1 - 9:1(1-stage)   | 290       | 97     |
| HFI3290-GPK65 | 16 :1 - 49:1(2-stage) | 308       | 115    |

- \*) Designs with parking brake respectively 30 mm longer.  
Designs with fieldbus module respectively 14 mm longer.  
\*\*) Shorter designs with teathed motorshaft on request.

|                                       |                  |
|---------------------------------------|------------------|
| type                                  | HFI 32 - GPK 65  |
| series                                | -                |
| operation acc. to standards VDE 0530  | S1               |
| isolation acc. to standards VDE 0530  | F                |
| protection acc. to standards VDE 0530 | IP 54            |
| kind of connection                    | flange connector |
| rotating direction                    | reversible       |
| bearing (motor and gear box)          | ball bearing     |
| gear box                              | not self-locking |

for detailed motor data please refer to data sheet HFI 32

#### Motor design:

The HFI 32 - GPK 65 are composed of brushless synchronous servo motors with concentrated winding systems and integrated electronics and a flange-mounted planetary gear. These very compact and powerful drives are well suited for peripheral applications in single or multi axes systems operating at selective 24VDC (only HFI 3260) or 48VDC.

The HFI's are operated either by analogue/digital signals or via the CAN interface. By means of an optional fieldbus module, the devices can be integrated into common, Ethernet-based fieldbuses.

The rotor position is evaluated through a linear hall sensor system. The sinusoidal motor current feed leads to smooth and constant torque development.

Optionally the drives are available with functional safety „STO“ according to Performance-Level [e], cat. 3; SIL-3.

The drive's configuration is done via RS232 and a clear and simple to use PC-Software „DserV“.

Other gear ratios and special designs on request.

#### Gearbox design:

The planetary gear GPK 65 splits the torque to be transmitted into three symmetrical parts. In conjunction with the one-piece gear housing and with the combination of output bearing and centring flange it leads to a very compact design.

The connection to the motor shaft is done via a clamping hub and offers easy possibilities of interchanging.

All toothing parts are made of heat-treated high-strength steel.

The gearbox has a synthetic grease lifetime lubrication.

The planet wheels are equipped with needle bearings.

The output shaft is double-supported by roller bearing which leads to high axial and radial load capabilities.

Through the very robust construction the gearboxes series GPK 65 are well suited for industrial applications.

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# HFI 32 - GPK 65

| 1 nominal voltage | 2 nominal speed | 3 nominal torque <sup>2)</sup> | 4 starting torque | 5 nominal power <sup>2)</sup> | 6 nominal current <sup>1)</sup> | 7 power gear box input | 8 nominal speed gear box input | 9 ratio gear box | 10 efficiency gear box | load limitations gear box |    |    | 14 max. backlash | 15 moment of inertia gear box <sup>3)</sup> | 16 total weight motor + gear box | 17 F <sub>R</sub> (allow. radial shaft load) <sup>4)</sup> | 18 F <sub>A</sub> (allow. axial shaft load) |
|-------------------|-----------------|--------------------------------|-------------------|-------------------------------|---------------------------------|------------------------|--------------------------------|------------------|------------------------|---------------------------|----|----|------------------|---|----------------------------------|--|---|
| VDC               | rpm             | Nm                             | Nm                | W                             | ADC                             | W                      | rpm                            | i                | %                      | W                         | Nm | Nm | ∠ min            | kgm <sup>2</sup>                            | kg                               | N  | N   |

## HFI 3260 - GPK 65

|    |     |                  |                  |     |                    |     |      |       |    |      |    |    |    |   |      |     |     |
|----|-----|------------------|------------------|-----|--------------------|-----|------|-------|----|------|----|----|----|---|------|-----|-----|
| 24 | 650 | 3,6              | 6,0              | 245 | 14,0               | 260 | 2600 | 4 :1  | 95 | 2040 | 30 | 48 | 25 | - | 3,80 | 900 | 400 |
| 48 | 750 | 3,8              | 6,0              | 300 | 8,0                | 315 | 3000 |       |    | 2360 |    |    |    |   |      |     |     |
| 24 | 371 | 6,3              | 11               | 245 | 14,0               | 260 | 2600 | 7 :1  | 95 | 1170 | 30 | 48 | 25 | - | 3,80 | 900 | 400 |
| 48 | 429 | 6,7              | 11               | 300 | 8,0                | 315 | 3000 |       |    | 1350 |    |    |    |   |      |     |     |
| 24 | 289 | 8,1              | 14               | 245 | 14,0               | 260 | 2600 | 9 :1  | 95 | 605  | 20 | 36 | 25 | - | 3,80 | 900 | 400 |
| 48 | 333 | 8,6              | 14               | 300 | 8,0                | 315 | 3000 |       |    | 700  |    |    |    |   |      |     |     |
| 24 | 163 | 14               | 24               | 235 | 14,0               | 260 | 2600 | 16 :1 | 90 | 850  | 50 | 75 | 30 | - | 4,20 | 900 | 400 |
| 48 | 188 | 14               | 24               | 285 | 8,0                | 315 | 3000 |       |    | 980  |    |    |    |   |      |     |     |
| 24 | 93  | 24               | 42               | 235 | 14,0               | 260 | 2600 | 28 :1 | 90 | 485  | 50 | 75 | 30 | - | 4,20 | 900 | 400 |
| 48 | 107 | 25               | 42               | 285 | 8,0                | 315 | 3000 |       |    | 560  |    |    |    |   |      |     |     |
| 24 | 53  | 40 <sup>5)</sup> | 60 <sup>5)</sup> | 220 | 13,4 <sup>5)</sup> | 245 | 2600 | 49 :1 | 90 | 220  | 40 | 60 | 30 | - | 4,20 | 900 | 400 |
| 48 | 61  | 40 <sup>5)</sup> | 60 <sup>5)</sup> | 255 | 7,3 <sup>5)</sup>  | 285 | 3000 |       |    | 255  |    |    |    |   |      |     |     |

## HFI 3290 - GPK 65

|    |     |                  |                  |     |                   |     |      |       |    |      |    |    |    |   |      |     |     |
|----|-----|------------------|------------------|-----|-------------------|-----|------|-------|----|------|----|----|----|---|------|-----|-----|
| 48 | 750 | 5,3              | 9,0              | 420 | 10,8              | 440 | 3000 | 4 :1  | 95 | 2360 | 30 | 48 | 25 | - | 4,40 | 900 | 400 |
| 48 | 429 | 9,3              | 16               | 420 | 10,8              | 440 | 3000 | 7 :1  | 95 | 1350 | 30 | 48 | 25 | - | 4,40 | 900 | 400 |
| 48 | 333 | 12               | 20               | 420 | 10,8              | 440 | 3000 | 9 :1  | 95 | 700  | 20 | 36 | 25 | - | 4,40 | 900 | 400 |
| 48 | 188 | 20               | 36               | 395 | 10,8              | 440 | 3000 | 16 :1 | 90 | 980  | 50 | 75 | 30 | - | 4,80 | 900 | 400 |
| 48 | 107 | 35               | 63               | 395 | 10,8              | 440 | 3000 | 28 :1 | 90 | 560  | 50 | 75 | 30 | - | 4,80 | 900 | 400 |
| 48 | 61  | 40 <sup>5)</sup> | 60 <sup>5)</sup> | 255 | 7,0 <sup>5)</sup> | 285 | 3000 | 49 :1 | 90 | 255  | 40 | 60 | 30 | - | 4,80 | 900 | 400 |

Tolerances +/- 10 %.

Columns 3 and 10

Values are valid at operating temperature after run-in period.

Columns 3 and 6

To avoid gearbox overload, it is necessary to limit the motor torque by adjusting the motor current in the integrated electronics (at higher gear ratios).

Columns 4

Values are valid assuming that the drive is loaded with peak torque. For higher ratios it is necessary to limit the peak current in the integrated electronics.

Columns 11, 12 and 13

To avoid gearbox overload do not exceed the mentioned values. For oscillating operation the mentioned limitations must be multiplied by 0,75.

1) input DC-current

2) Values are for motor-assembling on a locating face of aluminium of at least 0,15 m<sup>2</sup> at a thickness of 10 mm or similar metal face.

3) Values are reduced to motor shaft.

4) Middle of the shaft-extension.

5) Motor current must be limited in the integrated electronics to avoid excess of the mentioned value.